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| 10/743,283 | 12/23/2003 | Takeshi Asakura | 3673-0163P | 7867 |
| 2292 7590 12/23/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/743,283

Applicant(s)

ASAKURA, TAKESHI

Examiner

ROSS A. WILLIAMS

Art Unit

3714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4, 5 and 7-12 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2, 4, 5, 7-12 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

This Non-Final Office action is to more concretely and accurately specify the Examiners position and interpretation of the primary reference and clarify the grounds for rejection of the outstanding claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims state that second camera photographs the back of the ball later than the first camera in line 4 and then in line 13 the claim states that the first and second camera take pictures simultaneously. Thus it is not clear as to if the cameras are taking pictures simultaneously or not.

The same reasoning applies to claims 4 and 7 as stated above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4, 5, 7 -12 are rejected under 35 U.S.C. 102(e) as being anticipated by Lutz (US 6,592,465).

As per claim 1, Lutz discloses a method of measuring the trajectory of a golf ball that is in flight after being hit. Specifically Lutz discloses:

a first camera for photographing a flying ball from a back of the flying ball (Lutz disclose multiple cameras that each posses a unique and individual angle of view. Lutz discloses a first camera 114a/214a that is positioned to photograph a rear portion of the ball in flight) (Lutz 10:57 – 11:39).

a second camera having an angle of view related to that of the first camera and serving to photograph the back of the flying ball later than the first camera (Lutz discloses at least one side camera 112a/212a-d that posses angles of view that are related to the first camera and photograph the back of the flying ball later than the first) (Lutz 10:57 - 11:39);

a third camera for photographing a front of the flying ball (116/216 that photographs a front portion of the ball when in flight);

a control portion for controlling photographing timings of the first, second and third cameras (Lutz discloses a trigger device that controls the timing as per when the cameras operate to take images of the ball in flight) (Lutz 5:17 – 43);

and a calculating portion for calculating position coordinates of the ball based on image data obtained by the first, second and third cameras, and based on position coordinates, directions of optical axes and angles of view of the respective cameras (Lutz discloses a calculating portion that calculates the position coordinates of the ball in the multiple images that are each taken by the plurality of cameras. Specifically Lutz discloses that position data can be determined to subsequently determine the trajectory of the ball. The ball's trajectory is determined by the x-y coordinate data that is determined by the multiple images that the ball is photographed in.) (Lutz 9:66 - 10:9),

wherein the angle of view of the first camera partially overlaps with that of the second camera (the camera angles of view overlap) (Lutz Fig 5, 6), *the angle of view of the second camera is related to that of the first camera based on ball images which are simultaneously photographed by the first camera and the second camera* (when the ball is launched the cameras take continuous pictures of the ball) (Lutz 11:34 – 39), *and a correspondence of the coordinates in the angle of view of the first camera to those in the angle of view of the second camera is grasped by the calculating means portion* (Lutz discloses the correlating of the coordinates of the ball that is found in the images captured by the cameras while the ball passes by the cameras taking pictures while the ball is in flight and within the cameras "angle of view", i.e. field of view) (Lutz 9:66 - 10:9).

As per claim 2, *wherein the first camera is positioned behind a ball launch point, the second camera is positioned between the launch point and a drop point, and the third camera is positioned after the drop point* (As can be seen Lutz discloses the

positioning of cameras behind the launch point, between the launch point and drop point, and after the drop point) (Lutz Fig 5 and 6).

As per claim 4, a *first camera for photographing a front of a flying ball* (Lutz disclose multiple cameras that each possess a unique and individual angle of view. Lutz discloses a first camera 114a/214a that is positioned to photograph a rear portion of the ball in flight) (Lutz 10:57 – 11:39);

a second camera having an angle of view related to that of the first camera and serving to photograph the front of the flying ball earlier than the first camera (Lutz discloses at least one side camera 112a/212a-d that possesses angles of view that are related to the first camera and photograph the back of the flying ball later than the first) (Lutz 10:57 - 11:39);

a third camera for photographing a back of the flying ball (116/216 that photographs a front portion of the ball when in flight);

a control portion for controlling photographing timings of the first, second and third cameras (Lutz discloses a trigger device that controls the timing as per when the cameras operate to take images of the ball in flight) (Lutz 5:17 – 43);

and a calculating portion for calculating position coordinates of the ball based on image data obtained by the first, second and third cameras, and based on position coordinates, directions of optical axes and angles of view of the respective cameras (Lutz discloses a calculating portion that calculates the position coordinates of the ball in the multiple images that are each taken by the plurality of cameras. Specifically Lutz

discloses that position data can be determined to subsequently determine the trajectory of the ball. The ball's trajectory is determined by the x-y coordinate data that is determined by the multiple images that the ball is photographed in.) (Lutz 9:66 - 10:9),

wherein the angle of view of the first camera partially overlaps with that of the second camera (the camera angles of view overlap) (Lutz Fig 5, 6), the angle of view of the second camera, is related to that of the first camera based on ball images, which are simultaneously photographed by the first camera and the second camera (when the ball is launched the cameras take continuous pictures of the ball) (Lutz 11:34 – 39), and a correspondence of the coordinates in the angle of view of the first camera to those in the angle of view of the second camera is grasped by the calculating portion (Lutz discloses the correlating of the coordinates of the ball that is found in the images captured by the cameras while the ball passes by the cameras taking pictures while the ball is in flight and within the cameras "angle of view", i.e. field of view) (Lutz 9:66 - 10:9).

As per claim 5, *wherein the first camera is positioned after a ball drop point, the second camera is positioned between a launch point and the drop point, and the third camera is positioned behind the launch point* (As can be seen Lutz discloses the positioning of cameras behind the launch point, between the launch point and drop point, and after the drop point) (Lutz Fig 5 and 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutz (US 6,592,465).

As per claim 7,

a first camera for photographing a flying ball from a back of the flying ball (Lutz disclose multiple cameras that each possess a unique and individual angle of view. Lutz discloses a first camera 114a/214a that is positioned to photograph a rear portion of the ball in flight) (Lutz 10:57 – 11:39);

a second camera having an angle of view related to that of the first camera and serving to: photograph the back of the flying ball later than the first camera (Lutz discloses at least one side camera 112a/212a-d that possesses angles of view that are

related to the first camera and photograph the back of the flying ball later than the first) (Lutz 10:57 - 11:39);

a third camera for photographing a front of the flying ball (116/216 that photographs a front portion of the ball when in flight) (Lutz 10:57 – 11:39);

a control portion for controlling photographing timings of the first, second and third cameras (Lutz discloses a trigger device that controls the timing as per when the cameras operate to take images of the ball in flight) (Lutz 5:17 – 43);

and a calculating portion, for calculating position coordinates of the ball based on image data obtained by the first, second and third cameras, and based on position coordinates, directions of optical axes and angles of view of the respective cameras (Lutz discloses a calculating portion that calculates the position coordinates of the ball in the multiple images that are each taken by the plurality of cameras. Specifically Lutz discloses that position data can be determined to subsequently determine the trajectory of the ball. The ball's trajectory is determined by the x-y coordinate data that is determined by the multiple images that the ball is photographed in.) (Lutz 9:66 - 10:9),

wherein the angle of view of the first camera partially overlaps with that of the second camera(the camera angles of view overlap) (Lutz Fig 5, 6), the angle of view of the second camera is related to that of the first camera based on ball images which are simultaneously photographed by the first camera and the second camera (when the ball is launched the cameras take continuous pictures of the ball) (Lutz 11:34 – 39), and

However Lutz does not specifically disclose *"wherein the first camera and the second camera are located at substantially the same distance, at the same elevation*

and directly behind the launch point, said first and second cameras are inclined upward from a horizontal direction, and an angle of inclination of said first camera is greater than an angle of inclination of said second camera."

Lutz, however, does disclose that in the embodiment of Figure 1 that the first and second cameras maybe located behind the launch point and at substantially the same elevation and distance. In the embodiment of Figure 7 the cameras may have different angles of view and may be angles upward more so than other cameras (Lutz 11:40 – 47).

It would be obvious to one of ordinary skill in the art to combine the embodiments of Lutz, specifically the embodiments of figures 1 and 7 to provide an imaging system that incorporates many cameras at varying positions (i.e. behind and in front of the launch points) and having different inclined angles of view along the balls flight path. This would provide a more accurate imaging representation of the trajectory of the ball and also provide for additional data to be collected such as velocity data and spin decay rates (Lutz 11:54 – 56).

As per claim 8, *wherein said first and second cameras are inclined upward from a horizontal direction, and an angle of inclination of said first camera is less than an angle of inclination of said second camera* (Lutz discloses that the cameras each have different incline angles that will affect the angles of view) (Lutz 11:40 – 47).

As per claim 9, *wherein the flying ball is photographed by only said first and said third camera during a first portion of the flight of the flying ball, said first, second and third cameras during a second portion of the flight of the flying ball, and only said*

second and third cameras during a third portion of the flight of the flying ball (Lutz discloses that each camera may have different focal lengths wherein they can image the ball in flight. Thus some cameras may be able to photograph the ball and others may not be able to depending on the location of the ball at a given time) (11:7 – 17).

As per claim 10, wherein the flying ball is photographed by only said third and said second camera during a first portion of the flight of the flying ball, said first, second and third cameras during a second portion of the flight of the flying ball, and only said first and third cameras during a third portion of the flight of the flying ball (Lutz discloses that each camera may have different focal lengths wherein they can image the ball in flight. Thus some cameras may be able to photograph the ball and others may not be able to depending on the location of the ball at a given time) (11:7 – 17).

As per claim 11, wherein a correspondence of the coordinates in the angle of view of the first camera to those in the angle of view of the second camera is grasped by the calculating portion (Lutz discloses a calculating portion that calculates the position coordinates of the ball in the multiple images that are each taken by the plurality of cameras. Specifically Lutz discloses that position data can be determined to subsequently determine the trajectory of the ball. The ball's trajectory is determined by the x-y coordinate data that is determined by the multiple images that the ball is photographed in.) (Lutz 9:66 - 10:9).

As per claim 12, wherein the flying ball is photographed by only said first and said third camera during a first portion of the flight of the flying ball, said first, second and third cameras during a second portion of the flight of the flying ball, and only said

second and third cameras during a third portion of the flight of the flying ball (Lutz discloses that each camera may have different focal lengths wherein they can image the ball in flight. Thus some cameras may be able to photograph the ball and others may not be able to depending on the location of the ball at a given time) (11:7 – 17).

Response to Arguments

Applicant's arguments with respect to claim 1, 2, 4, 5, 7 -12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROSS A. WILLIAMS whose telephone number is 571-272-5911. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ronald Laneau can be reached on 571-272-6784. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. A. W./
Examiner, Art Unit 3714

/Ronald Laneau/
Primary Examiner, Art Unit 3714
12/17/08

Application Number**Application/Control No.**

10/743,283

Examiner

ROSS A. WILLIAMS

**Applicant(s)/Patent under
Reexamination**

ASAKURA, TAKESHI

Art Unit

3714